

## **REMARKS**

### **Introduction**

Applicant notes with appreciation the Examiner's indication that claims 4-13 would be allowable if rewritten in independent form. Applicant also notes with appreciation the Examiner's indication that each of the references cited in the Information Disclosure Statement of May 6, 2008 has been considered.

Upon entry of the foregoing amendment, claims 1-26 are pending in the application. No new matter is being presented. In view of the following remarks, reconsideration and allowance of all the pending claims are requested.

### **Rejection under 35 USC § 103**

Claims 1-3, 14-18 and 22-26 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 7,081,891 to Schermerhorn (hereinafter "Schermerhorn") in view of JP Publication No. 11-231829 to Kenji (hereinafter "Kenji"). Applicant respectfully traverses these rejections for at least the following reasons.

#### **Claim 1**

On page 4 of the Office Action, the Examiner acknowledges and Applicant agrees that Schermerhorn fails to teach or suggest "having current flow paths coupled to each of X and Y axes electrodes of the display panel." The Examiner contends that Kenji describes "a first switchable current path z1 and a second current path z2 are provided between a power source line 51 and a terminal px to apply electric voltage to each cell in common with one another (see the abstract)." The Examiner contends that

it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Schermerhorn's single driver circuit 30 shown in Fig. 4 with Kenji's first switchable current path z1 and the second current path z2, because the use of the first switchable current path z1 and the second current path z2 helps reduce unnecessary electromagnetic radiation in a plasma display

system as taught by Kenji (see the abstract).

Applicant respectfully submits that Schermerhorn and Kenji, whether taken alone or in combination with one another, fail to teach or suggest, among other things, "a single-sided driver circuit having separate current flow paths *coupled to each of X and Y axes electrodes* of the display panel" (emphasis added). In contrast, Kenji illustrates in FIGS. 4 and 5 that an X common driver 85 is coupled to first electrode group XG (i.e., to the X electrodes), and a Y common driver 87 (which is separate from the X common driver 85) is coupled to the second electrode group YG (i.e., to the Y electrodes). Thus, the X common driver 85 and the Y common driver 87 are not part of the same "single-sided driver circuit" having "current flow paths "coupled to each of the X and Y axes electrodes." Rather, a drive circuit is connected to either a set of X-axis electrodes or Y-axis electrodes, and the drive circuit is not "coupled to each of the X and Y axes electrodes." Moreover, the current paths z1 formed by the switching element Q1 and the current path z2 formed by the switching element Q2 are part of the same X common driver 85, and have nothing to do with having "separate current flow paths *coupled to each of X and Y axes electrodes*" (emphasis added). As described in paragraphs [0031] and [0034] of Kenji, the impedance of the current path z2 is larger than the current path z1, and the opening and closing of the current path z2 (with the larger impedance) is performed in advance of opening and closing the current path z1 with the smaller impedance so that the voltage drop at the time of gas discharge can be suppressed to the minimum, and the peak value of capacity charging current and capacity discharge current can be reduced. Thus, the switching between the current path z1 and the current path z2 does not teach or suggest "current flow paths *coupled to each of X and Y axes electrodes* of the display panel" (emphasis added).

Since Schermerhorn and Kenji, whether taken alone or in combination with one another, fail to teach or suggest every element as recited in Applicant's independent claim 1, claim 1 is patentably distinguishable and deemed to be allowable.

Accordingly, withdrawal of this rejection and allowance of this claim is earnestly solicited.

#### Claims 2 and 3

With regard to dependent claims 2 and 3, it is requested that for at least the reason that

this claim depends from allowable independent claim 1, and therefore contains each of the features as recited in claim 1, claims 2 and 3 are also patentable.

Accordingly, withdrawal of these rejections and allowance of these claim is earnestly solicited.

#### Claim 14

On page 6 of the Office Action, the Examiner acknowledges and Applicant agrees that Schermerhorn fails to teach or suggest "switching element that establish current flow paths." The Examiner contends that Kenji describes that "a first switchable current path z1 and a second current path z2 are provided between a power source line 51 and a terminal px to apply electric voltage to each cell in common with one another (see the abstract)." The Examiner contends that

it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Schermerhorn's single driver circuit 30 shown in Fig. 4 with Kenji's first switchable current path z1 and the second current path z2, because the use of the first switchable current path z1 and the second current path z2 helps reduce unnecessary electromagnetic radiation in a plasma display system as taught by Kenji (see the abstract).

Applicant respectfully submits that Schermerhorn and Kenji, whether taken alone or in combination with one another, fail to teach or suggest, among other things, "selecting circuit elements including energy accumulation elements and switching elements that establish *current flow paths to generate respective predetermined driver voltage waveforms at X and Y axes electrodes* according to predetermined switching sequences so that a resulting voltage across the X and Y electrodes alternates in polarity with respect to a reference voltage to drive the display panel" (emphasis added) for at least the same reasons as discussed above in connection with claim 1.

Since Schermerhorn and Kenji, whether taken alone or in combination with one another, fail to teach or suggest every element as recited in Applicant's independent claim 14, claim 14 is patentably distinguishable and deemed to be allowable.

Accordingly, withdrawal of this rejection and allowance of this claim is earnestly solicited.

Claims 15-18

With regard to claims 15-18, it is requested that for at least the reasons that these claims depend from allowable independent claim 14, and therefore contain each of the features as recited in claim 14, claims 15-18 are also patentable.

Accordingly, withdrawal of these rejections and allowance of these claims is earnestly solicited.

Claims 22 and 23

With regard to independent claim 22, on page 7 of the Office Action, the Examiner acknowledges that Schermerhorn fails to teach or suggest "switching current between current flow paths." On page 8 of the Office Action, the Examiner contends that Kenji describes "a first switchable current path z1 and a second current path z2 are provided between a power source line 51 and a terminal px to apply electric voltage to each cell in common with one another (see the abstract)." The Examiner contends that

it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Schermerhorn's single driver circuit 30 shown in Fig. 4 with Kenji's first switchable current path z1 and the second current path z2, because the use of the first switchable current path z1 and the second current path z2 helps reduce unnecessary electromagnetic radiation in a plasma display system as taught by Kenji (see the abstract).

Applicant respectfully submits that Schermerhorn and Kenji, whether taken alone or in combination with one another, fail to teach or suggest, among other things, "*switching current between current flow paths* to generate predetermined driving voltage waveforms alternating in polarity with respect to a reference voltage *across X and Y axes electrodes* according to predetermined switching sequences to drive the display panel" (emphasis added). In contrast, as illustrated by Kenji in FIGS. 4 and 5, the current paths z1 formed by the switching element Q1 and the current path z2 formed by the switching element Q2 are part of the same X common driver 85, and have nothing to do with "switching current between current flow paths ... *across X and Y axes electrodes*" (emphasis added). At best, the switching from the current path z1 to the

current path z2 relates to current path switching in the same X common driver 85 – not “switching current between current flow paths ... across X and Y axes electrodes.”

Since Schermerhorn and Kenji, whether taken alone or in combination with one another, fail to teach or suggest every element as recited in Applicant’s independent claim 22, claim 22 is patentably distinguishable and deemed to be allowable.

With regard to dependent claim 23, it is requested that for at least the reason that this claim depends from allowable independent claim 22, and therefore contains each of the features as recited in claim 22, claim 23 is also patentable.

Accordingly, withdrawal of these rejections and allowance of these claims is earnestly solicited.

#### Claims 24 and 25

With regard to independent claim 24, on page 2 of the Office Action, the Examiner Contends that Schermerhorn describes “a single sided driver (Fig. 4 (30)) used with a display panel (col. 4, lines 52-54, col. 6, lines 49-51, Fig. 4 (30, 14), a single driver circuit 30, which is capable of driving the a *[sic]* Plasma Display Panel (PDP) (14)).” On page 4 of the Office Action, the Examiner acknowledges and Applicant agrees that Schermerhorn fails to teach or suggest “having current flow paths coupled to each of X and Y axes electrodes of the display panel.” The Examiner contends that Kenji describes “a first switchable current path z1 and a second current path z2 are provided between a power source line 51 and a terminal px to apply electric voltage to each cell in common with one another (see the abstract).” The Examiner contends that

it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Schermerhorn’s single driver circuit 30 shown in Fig. 4 with Kenji’s first switchable current path z1 and the second current path z2, because the use of the first switchable current path z1 and the second current path z2 helps reduce unnecessary electromagnetic radiation in a plasma display system as taught by Kenji (see the abstract).

Applicant respectfully submits that Schermerhorn and Kenji, whether taken alone or in combination with one another, fail to teach or suggest, among other things, “a second sustain

driver circuit connected electrically in series with the first sustain driver circuit to provide a second current to a second electrode of the display panel, the first current and the second current producing a time-varying voltage across the first electrode and the second electrode." In contrast, paragraph [0019] of Kenji describes a *parallel* arrangement sustaining electrodes – not sustain driver circuits "connected electrically in series." And, at best, Schermerhorn illustrates a driver circuit 30 in FIG. 4 and describes in col. 4, lines 29-31 that the driver circuit 30 is for "supplying a sustaining voltage to a flat plasma display panel." Schermerhorn does not teach or suggest that "a second sustain driver circuit connected electrically in series" with the driver circuit 30.

Since Schermerhorn and Kenji, whether taken alone or in combination with one another, fail to teach or suggest every element as recited in Applicant's independent claim 24, claim 24 is patentably distinguishable and deemed to be allowable.

With regard to dependent claim 25, it is requested that for at least the reason that this claim depends from allowable independent claim 24, and therefore contains each of the features as recited in claim 24, claim 25 is also patentable.

Accordingly, withdrawal of these rejections and allowance of these claims is earnestly solicited.

#### Claim 26

With regard to independent claim 24, on page 2 of the Office Action, the Examiner contends that Schermerhorn describes "a single sided driver (Fig. 4 (30)) used with a display panel (col. 4, lines 52-54, col. 6, lines 49-51, Fig. 4 (30, 14), a single driver circuit 30, which is capable of driving the a [sic] Plasma Display Panel (PDP) (14))." On page 4 of the Office Action, the Examiner acknowledges and Applicant agrees that Schermerhorn fails to teach or suggest "having current flow paths coupled to each of X and Y axes electrodes of the display panel." The Examiner contends that Kenji describes "a first switchable current path z1 and a second current path z2 are provided between a power source line 51 and a terminal px to apply electric voltage to each cell in common with one another (see the abstract)." The Examiner contends that

it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Schermerhorn's single driver circuit 30 shown in Fig. 4 with Kenji's first switchable current path z1 and the second current path z2, because the use of the first switchable current path z1 and the second current path z2 helps reduce unnecessary electromagnetic radiation in a plasma display system as taught by Kenji (see the abstract).

Applicant respectfully submits that Schermerhorn and Kenji, whether taken alone or in combination with one another, fail to teach or suggest, among other things, "a switching circuit to control a current in energy accumulation elements in the *first current path and the second current path* to produce in temporally adjacent gas discharge periods a voltage *between the first axis electrode and the second axis electrode* that alternates in polarity with respect to a reference voltage" (emphasis added). In contrast, as illustrated by Kenji in FIGS. 4 and 5, the current paths z1 formed by the switching element Q1 and the current path z2 formed by the switching element Q2 are part of the same X common driver 85, and have nothing to do with "a switching circuit to control a current in energy accumulation elements in the *first current path and the second current path* to produce in temporally adjacent gas discharge periods a voltage *between the first axis electrode and the second axis electrode*" (emphasis added). At best, the switching from the current path z1 to the current path z2 relates to current path switching in the same X common driver 85 – not "a switching circuit to control ... the first current path and the second current path to produce ... a voltage *between the first axis electrode and the second axis electrode*" (emphasis added).

Since Schermerhorn and Kenji, whether taken alone or in combination with one another, fail to teach or suggest every element as recited in Applicant's independent claim 24, claim 24 is patentably distinguishable and deemed to be allowable.

Accordingly, withdrawal of this rejection and allowance of this claim is earnestly solicited.

#### **Claim Objections**

On page 12 of the Office Action, the Examiner contends that claims 4-13 "are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims." Applicant respectfully requests that for at least the reasons that claims 4-13 depend from

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allowable independent claim 1, and therefore contain each of the features as recited in claim 1, claims 4-13 are also patentable over the prior art of record. Accordingly, withdrawal of these objections and allowance of these claims is earnestly solicited.

### **Conclusion**

It is respectfully submitted that a full and complete response has been made to the outstanding Office Action and, as such, there being no other objections or rejections, this application is in condition for allowance, and a notice to this effect is earnestly solicited.


If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided below.

If any further fees are required in connection with the filing of this amendment, please charge the same to our Deposit Account No. 502827.

Respectfully submitted,

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